IN THE CLAIMS:

Please cancel claims 1-5, 7-16, 18-20, 22-30 and 34-37 and add claims 39-53.

Claims 1-5 (Cancelled)

Claim 6. (Original) A method of screening for a substance that regulates nicotine metabolism to cotinine in an individual comprising assaying for a substance which (i) selectively inhibits CYP2A6 activity, or (ii) selectively inhibits transcription and/or translation of the gene encoding CYP2A6.

Claims 7-16 (Cancelled)

Claim 17. (Original) A method for enhancing inhibition of nicotine metabolism by a CYP2A6 inhibitor in an individual comprising administering to the individual an effective amount of a substance which selectively inhibits CYP2A6, and an effective amount of an inhibitor of CYP2B6.

Claims 18-20. (Cancelled)

Claim 21. (Original) A pharmaceutical composition for use in treating a condition requiring regulation of nicotine metabolism to cotinine comprising an effective amount of a substance which selectively inhibits CYP2A6, an effective amount of an inhibitor of CYP2B6, and/or a pharmaceutically acceptable carrier, diluent, or excipient.

Claims 22-30. (Cancelled)

Claim 31. (Original) A method for determining the CYP2A6 activity in an individual containing two mutant alleles, one mutant allele or no mutant alleles at a gene locus for the CYP2A6 gene, the method comprising the steps of:

(a) assaying a DNA-containing bodily sample from the individual to determine whether the individual contains two mutant alleles, one mutant allele or no mutant alleles at the CYP2A6 gene locus;

(b) determining the amount of CYP2A6 present in the individual; and

(c) correlating the results of assaying in step (a) and the amount of CYP2A6 in step (b) to determine an appropriate dosage for that individual of a substance which (i) selectively inhibits CYP2A6 activity, or (ii) selectively inhibits transcription and/or translation of the gene encoding CYP2A6.

Claim 32. (Original) The method defined in claim 31, wherein the DNA-containing bodily sample is a blood sample.

Claim 33. (Original) The method defined in claim 31, wherein the DNA-containing bodily sample is a tissue sample.

Claim 34-37. (Cancelled)

Claim 38. (Original) A method for treating a condition requiring regulation of nicotine metabolism to cotinine in an individual comprising administering to the subject: (a) an effective amount of a first substance which selectively inhibits CYP2A6; and (b) an effective amount of a second substance which is capable of regulating inhibition of the first substance.

Claim 39. (New) A method of regulating the metabolism of nicotine to continine comprising administering to an individual an effective amount of a substance which selectively inhibits CYP2A6.

Claim 40. (New) The method of claim 39, wherein the individual maintains elevated plasma concentrations of nicotine compared to an individual who has not been administered a CYP2A6 inhibitor.

Claim 41. (New) The method of claim 40, wherein liver enzyme function is inhibited by greater than 80% following administration of the CYP2A6 inhibitor.

Claim 42. (New) The method of claim 39, wherein the substance is administered to an individual wherein said individual has a condition selected from the group consisting of

opioid related disorders; proliferative diseases; cognitive, neurological, mental disorders, other drug dependencies, malignant disease, psychosis, schizophrenia, Parkinson's disease, anxiety, depression, alcoholism, dependent tobacco use, non-dependent tobacco use and opiate dependence.

Claim 43. (New) The method of claim 42, wherein the condition is dependent or non-dependent tobacco use.

Claim 44. (New) The method of claim 42, comprising optionally administering to an individual a mixture comprising two or more of said substances.

Claim 45. (New) The method of claim 42, wherein CYP2A6 is selectively inhibited by administering to the individual at least one compound having a lactone structure with a carbonyl moiety.

Claim 46. (New) The method of claim 45, wherein CYP2A6 is selectively inhibited by administering to the individual at least one compound selected from the group consisting of coumarin, furanocoumarin, methoxsalen, imperatorin, psoralen, α-naphthoflavone, isopimpinellin, β-naphthoflavone, bergapten, sphondin, coumatetralyl (racumin), (+)-cis-3,5-dimethyl-2-(3-pyridyl)-thiazolidim-4-one, naringenin and related flavones, diethyldithiocarbamate, N-nitrosodialkylamine, nitropyrene, menadione, imidazole antimycotics, miconazole, clotrimazole, pilocarpine, hexamethylphosphoramide, 4-methylnitrosamine-3-pyridyl-1-butanol, aflatoxin B, analogs thereof and derivatives thereof, and mixtures thereof.

Claim 47. (New) The method of claim 46, wherein the N-nitrosodialkylamine is selected from the group consisting of N-nitrosodiethylamine, N-nitrosodimethylamine and mixtures thereof.

Claim 48. (New) The method of claim 47, wherein the substance is methoxsalen or a derivative thereof.

Claim 49. (New) The method of claim 10 further comprising administering an effective amount of a second substance which is capable of regulating inhibition of a substance which selectively inhibits CYP2A6.

Claim 50. (New) A method for treating dependent tobacco use comprising administering to an individual an effective amount of at least one compound having a lactone structure with a carbonyl moiety.

Claim 51. (New) The method of claim 51 wherein said compound is coumarin, furanocoumarin, methoxsalen, imperatorin, psoralen, α-naphthoflavone, isopimpinellin, β-naphthoflavone, bergapten, sphondin, coumatetralyl (racumin), (+)-cis-3,5-dimethyl-2-(3-pyridyl)-thiazolidim-4-one, naringenin and related flavones, diethyldithiocarbamate, N-nitrosodialkylamine, nitropyrene, menadione, imidazole antimycotics, miconazole, clotrimazole, pilocarpine, hexamethylphosphoramide, 4-methylnitrosamine-3-pyridyl-1-butanol, aflatoxin B, analogs thereof and derivatives thereof, or mixtures thereof.

Claim 52. (New) A method comprising inhibiting metabolism of nicotine to continine by administering an effective amount of a substance which selectively inhibits CYP2A6 to an individual wherein said individual has a condition selected from the group consisting of a proliferative disease, a mental disorder, non-dependant tobacco use and drug dependency.

Claim 53. (New) The method of claim 52, wherein said substance is formulation for slow release.